Land policy REVIEW

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Editorial Notes

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LOOKING AHEAD: Articles in preparation for forthcoming issues include two dealing with two major phases of the FSA program. One by Paul Jehlik, of BAE, discusses "John Doe", ex-tenant farmer on his way up the agricultural ladder, "John Doe" representing the average of 38 tenant-purchase families in one FSA region. The other deals with the sturdy initiative and willing cooperation of 225 families, "blown" out of the Great Plains, that are trying an experiment in living in Montana's Flathead Valley, and making it work. Dorr Skeels is the author.

Angus McDonald, a soil conservationist in SCS, has written about men of the soil, from Jared Eliot to Hugh Bennett. Two articles about the Southwest are coming—one on Southwestern land history by Herbert O. Brayer, instructor in the University of New Mexico, and the other on settlement, by Dust Bowlers, of America's last free land, written by D. Harper Simms of the SCS staff in Albuquerque.

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The Columbia Basin: STUDIES IN PROGRESS

By EDWARD N. TORBERT. *One of history's major technical planning jobs is under way in the basin of the Columbia River where Grand Coulee Dam will open an area the size of Delaware to farmers. "It is in an effort to avoid mistakes of the past that the most comprehensive planning investigations ever undertaken for an irrigation development are under way now in the Basin."*

DURING THE next quarter century, thousands of people will be attracted to eastern Washington by the prospect of family security on the 2,500,000 acres of the Columbia Basin irrigation project. That the efforts of individuals in the past to turn a tract of raw land into a family-supporting farm have not always succeeded is a familiar, recurring fact. In the Columbia Basin project, the essential physical conditions are highly favorable, but these alone do not assure successful settlement. It is in an effort to avoid mistakes of the past that the most comprehensive planning investigations ever undertaken for an irrigation development are under way now in the basin.

The project is in the Big Bend country of eastern Washington. Of the acreage, about half, or an area as large as the State of Delaware, is irrigable. Water will be obtained from the Columbia River at Grand Coulee Dam, key structure of the project, which lies 60 miles north of the irrigable area. Although the dam is nearly completed, construction of the irrigation works must await making of contracts for repayment of that part of the cost chargeable to water users. These must be made with the irrigation district, of which there are three in the project area. It is not expected that water will be available for irrigation before 1945, and its availability at that time is contingent upon congressional appropriations for construction.

Diverse physical conditions broadly establish both present and prospective land use patterns. Largely accounting for the nonirrigable half of the area are two ridges trending east-west which lie above reach of the projected irrigation system, broad belts of rocky "scabland," and large, sandy wastes. The irrigable lands rise northward over flats and broad benches, and eastward onto rolling hills from elevations of less than 400 feet at the southern end of the project area to elevations of more than 1,300 feet at the northern and eastern margins. When fully developed, the well peopled, irrigated lands will form a pattern of great blocks separated by dry and sparsely peopled, or uninhabited zones of varying widths.

The Basin's Agriculture

Extensive grazing, dry farming, and a little irrigation farming are now the principal land uses. The growing season varies from an average of 180 days between killing frosts in the lower, southern parts to 140 days in the northeastern. The annual precipitation, ranging from 9 inches on the higher lands to 7 inches on the lower lands, is scanty in all parts of the project area. However, the greater precipitation on the higher lands, coupled with water-retentive loams of fine silt, permit the production of wheat by dry-farming methods in the east and north parts. Wheat yields are low and farms large. Many exceed 2,000 acres. In surveys made by agricultural economists during the past decade these lands have been classed as submarginal for wheat production and recommended for other uses. A few small tracts are irrigated by pumping from wells or from the Columbia or Snake Rivers. The greater part, however, is used only for grazing purposes and is sparsely populated. Large areas are without inhabitants.

The population of the project lands is about 10,000. Somewhat more than a third of the total is concentrated in the southern tip of the area at Pasco, largest town of the project, and in a small irrigation district adjoining the town. Other principal towns, of which no one has as many as 1,000 inhabitants, are spaced at about 20-mile intervals along railroads in the eastern and northern parts of the area. With full irrigation development, the rural population may reach 100,000, and the population in towns and villages of the project perhaps 2 or 2½ times that figure.

An ample physical base for the project is assured. Unlike any other major stream of the United States, the Columbia River, with sources in the ice fields of the Canadian Rockies, is at flood during midsummer. At Grand Coulee Dam, the maximum flow averages about 325,000 cubic feet per second and the minimum flow, which occurs in midwinter, is about 38,000 second-feet. During the 6 months, April–September inclusive, the average flow is 177,360 second-feet. Water removed from the river to irrigate the project lands at full development will amount to about 16,000 second-feet. An abundant supply of irrigation water obviously is available. Moreover, removal of some of the flood water for irrigation and storage of another portion behind Grand Coulee Dam for release during low water will appreciably benefit downstream power developments, river navigation, and flood control. Coincidence of the river's flood period with the

irrigation season has further significance. It makes available at Grand Coulee Dam a large block of seasonal power having little commercial utility and low market value. This can be used to lift water from the lake behind the dam into the irrigation-distribution system.

Lands to be irrigated lie several hundred feet above the level of the Columbia River at Grand Coulee Dam. From river level, water will be raised 355 feet in the lake behind the dam. From lake level, electrically operated pumps will lift water 280 feet into the balancing reservoir in the Grand Coulee. There it will be available for distribution by gravity through the canal system. The storage capacity of 340,000 acre-feet in the balancing reservoir will permit ready adjustment between requirements for irrigation water and the pumped supply. The power plants at the dam will have a total capacity of 1,944,000 kilowatts available for commercial prime power and for seasonal pumping requirements. Revenue from the sale of power, it is estimated, will repay not only the cost of the dam, but also about half of the cost of the irrigation works.

Four Basic Surveys

Four basic surveys of the project lands have been made. A retracement survey was made in which each section corner and each quarter section corner were located and marked. In a topographic survey, the project lands were mapped at scale of 1 inch to 400 feet with 2-foot contour interval. The topographic survey was used in the land classification survey. According to standards approved by a reviewing board of experts, lands were classified into three grades of arable land and a nonarable class in accordance with soil and other physical characteristics affecting the utility of the lands for irrigation agriculture. Subtypes of the second and third class arable lands were recognized on the basis of the deficiencies which excluded them from class 1, the best class of arable land. In the determination of soil and subsoil characteristics, a minimum of one inspection hole, 5 feet deep, was dug on each 40-acre tract. Of the 1,234,000 acres of irrigable land found, approximately 403,000 acres is class 1, 497,000 class 2, and 334,000 acres class 3. The lands classed as nonarable will not be supplied with water.

The fourth of the basic surveys is the land appraisal. In accordance with provisions of the Antispeculation Act of 1937, each 40-acre tract is being appraised at its current, dryland value. Other provisions of the act will curb speculative sale of lands and provide opportunity for settlers to acquire them at appraised values. For arable lands, appraised values range from about $5 an acre in the case of unimproved, sage-covered tracts, to about $25 for improved lands now used for dry farming. Curbs on speculative sale of lands do not become effective until repayment contracts are negotiated. The existence of the act, however, together with the fact, made widely known by the Bureau of Reclamation, that any individual may obtain without charge land classification and appraisal data has proved successful in minimizing speculation.

Costs have been estimated for water right and operation and maintenance of the irrigation system. That part of the cost of the irrigation works to be charged against the land will average an estimated $85 an

acre. This charge for water right will be payable in 40 annual installments without interest. The first installment will not be payable until the end of the development period. This may be as long as 10 years under existing law. The annual operation and maintenance charge, however, will be payable from the first year that water is delivered. This charge, it is estimated, will be approximately $2.60 per acre.

In the planning studies, a guiding concept is to implement the settler's own efforts. The resources made available by the project must be accessible to the settler in amounts and under economic and social conditions to facilitate his success. Attainment of success, however, must rest ultimately on his own efforts and capacities. The hard work and some of the privations associated with pioneer development cannot be eliminated. Nor can the settler be guaranteed success. He can, however, be provided with a substantial opportunity to achieve it. Establishment of such opportunities is a goal of the planning investigations.

A Start Toward Planning

The complexity and magnitude of the problems involved made it essential that all available experience and knowledge be brought to bear upon them. Accordingly, in the autumn of 1939 the joint investigations were established on a cooperative basis under the direction of H. H. Barrows, Planning Consultant to the Bureau of Reclamation, and W. E. Warne, Director of Information of that Bureau. The invitation to participate, extended to all qualified Federal, State, and local agencies, was enthusiastically received. More than 40 agencies represented by more than 100 individuals have membership on committees investigating the several problems set up for study. To facilitate its part of the work, the Department of Agriculture named a special field representative for the joint investigations. The Bureau of Reclamation appointed a field coordinator, stationed in the project area.

Twenty-eight separable but related problems were outlined for study. For each were appointed a group of investigators and an investigation leader or committee chairman. Final reports from some of the problem studies have been prepared, and others are nearing completion.

The problems may be divided into five general groups on the basis of subject matter. The groups are concerned with: (1) Farm economy, (2) towns and villages, (3) the control of land and of land use, (4) the distribution of costs and financing, and (5) public services.

Answers to questions directly involving the farm economy which it will be desirable to establish in the project area are sought by eight investigating committees. One of the committees has completed a series of reports setting forth the types of farm economy that have proved successful on the other Northwestern irrigation projects where basic conditions are similar to those that will be encountered on the Columbia Basin project.

A second group of investigators is well advanced on a study of crops, stock, farming practices, and other items of farm economies specifically adapted to different parts of the project area. As a part of this work, the perplexing but basically important questions of prospective market demand and prospective market outlets

for products of the area are receiving close attention.

The Need for Water

Determination of normal water requirements for recommended crops and land use programs is a third problem study. The investigators of a fourth, in completion of their work, have recommended an ingenious plan for preventing excessive use of water that will reward financially the especially careful water user and will penalize the careless irrigator. The optimum size of farm units for recommended types of farming will be determined by investigators of a fifth committee. Another is concerned with the desirable number, location, and size of small, part-time farm units. Other investigators are inquiring into portions of the project within which it is desirable that farms be laid out in adjustment to topography and topographically controlled features. Model farm lay-outs in such areas have been prepared. An eighth committee is charged with the problem of recommending means to help insure an adequate standard of living, and to minimize financial commitments of needy settlers in providing improvements.

In connection with this work, the BAE has undertaken a study of levels and standards of living. The results, it is expected, will aid materially in the establishment of farm economies which promise to provide an adequate income. Preliminary findings suggest that the minimum level of living acceptable to farm families of kinds to be expected on the Columbia Basin project requires an income available for family living of from $1,000 to $1,250. The value of farm-produced food and rental value of the farm home are included in that sum. In the study of means to minimize financial commitments for improvements, suitable low-cost housing, heavy leveling, provisions to pipe water under pressure from a single well to clustered farmhouses, acquisition of heavy machinery by cooperative organizations, and the like are receiving consideration. Another problem of concern to villages as well as to farms involves the occurrence, movements, quantities, and qualities of underground waters. The Geological Survey, in financial cooperation with the States, is studying this problem.

The people who will settle in the towns and villages of the project area probably will outnumber those on farms at least two to one when full development is reached. Service establishments and manufacturing plants in the towns will be of great significance to the farm population. Hence, one investigation is concerned with number and placement of villages, and development of rational and attractive plans for them. In part, the work involves provision of consultant services to planning groups in existing towns by a representative of the State planning council. In part it involves studies looking towards selection of sites and planning of developments for additional towns.

After settlement, maintenance of land uses in the long-run interests of the project will present other problems. In the approach to their solution, a group of investigators is considering: Education, land and water use regulations imposed by the Government to protect its investment, credit policies of Federal agencies, sales or lease contract provisions with respect to federally owned lands, and

self-imposed restraints such as zoning or soil-conservation district rules.

Of great importance is control of the rate at which lands are brought under irrigation. As a result of preliminary study, the committee investigating that topic has concluded that about 50,000 acres annually could advantageously be developed during the first few years. Final conclusions, however, await findings from the study of prospective market outlets.

How Will the Costs Fall?

The equitable distribution of costs is involved in three investigations, and the problem of financing settlers is the subject of a fourth. Regulation of the flow of the Columbia River provided by Grand Coulee Dam and the reservoir behind it will double the firm power capacities of hydroelectric plants between the dam and the mouth of the Snake River, and will increase by 50 percent the firm power capacities of plants further downstream. Flood peaks will be reduced, and the release of waters during the season of low flow can increase by 2 feet the minimum depth of the lower, navigable Columbia. These benefits are being evaluated by an investigating committee with a view to assigning to them an equitable share of the cost of the dam.

Another committee is concerned with location and improvement of sites for rural schools, churches, community halls, market centers, athletic fields, and the like. Closely related is the determination of advantages and disadvantages of concentration of farm settlers in small communities or nuclear hamlets. Preliminary findings suggest that high cost of wells in some places may prove a determining factor in establishment of small farm communities served by a common, domestic water system. Of special significance for both village and farm is the work of the committee studying processing plants and other marketing facilities, possibilities for other industrial developments, and means to guide development of such facilities and industries.

Effective control of project land has been regarded as prerequisite to successful development and settlement of the project. About 90 percent of the land is now owned by private individuals. The rest is owned by the State, counties, corporations, and the Federal Government. In a preliminary report a group of investigators has proposed acquisition of land by the Federal Government as the most desirable method of control. Lands thus acquired could readily be subdivided into appropriate farm units and subsequently be made available to settlers under conditions designed to promote their success. Means for obtaining requisite control of lands owned by the State, counties, and corporations is the subject of another study.

That villagers and other nonrural residents of a project area benefit from irrigation is clear. Opportunities upon which they capitalize, for the most part, are nonexistent before the development takes place. Consequently, it has been held that nonrural settlers should make equitable contributions to the cost of the irrigation works. The members of an investigating committee are determining methods by which such contributions may be obtained from nonrural settlers.

Another group has been presented with the problem of evolving means

Support

Agricultural production is the first in order, the strongest in necessity, and the highest in usefulness, in this whole system of acquisition. The other branches stand upon it, are sustained by it, and without it could not exist.

—SILAS WRIGHT

for assignment of repayment charges against different classes of irrigable lands. The objective of the investigators is to adjust repayment charges to economic capacities of the land under average management. The most difficult phase of the problem, determination of the economic capacities of the different classes of land, has been approached independently through analysis of loan experience, crop-yield indexes, and other experience, with gratifying similarity in results. A further check will be available through comparative farm budgets to be prepared by other investigators.

Leases With Options to Buy

Settler financing, an urgent need under most circumstances, is made the more imperative on the Columbia Basin project by the responsibility to provide opportunities there for many poor or even destitute families. In seeking an answer to the question of how adequate financial aid may best be extended, investigators are examining the experience and methods of financing agencies, and the rate and character of progress made by various settlers. One device given preliminary approval is leasing of federally owned land for a trial period, with option to buy later. The method would facilitate financing of needy families and permit the settler to demonstrate his ability in, and liking for, irrigation farming without assuming burdensome financial responsibilities.

Public services and governmental organizations are the subjects of several inquiries. They include studies to determine the desirable highway net, needed railroad extensions, potential significance of the Columbia River for navigation, adequate facilities, electric energy, and appropriate school districts and other governmental units. Recreational development of the lake behind Grand Coulee and improvement of other recreational areas are subjects of other inquiries. Included in the studies of public services are means by which they may be financed and provided when needed.

Completion of all the investigations is scheduled in ample time to prepare suitable programs before settlement. Recommendations from some of the investigations already have been incorporated in the preliminary draft of the repayment contract. Other contributions have been suggested for inclusion in a proposed amendment to the Anti-speculation Act. Moreover, a board of review will be appointed by the Commissioner of the Bureau of Reclamation, to study all of the reports submitted, to appraise plans of settlement and development based on the reports, and to recommend appropriate action programs for carrying out accepted proposals.

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Migration Westward: SUMMARY OF A DECADE

By SEYMOUR J. JANOW. *Previous articles published in the* LAND POLICY REVIEW *have reported the findings of several studies concerned with the migration of the 1930's to the far West. Here an attempt is made to review some of these findings and to relate them to more general considerations.*

HISTORICALLY, westward migration has been associated with continuous and rapid increase in the far West's population and economic development. Those who cleared the farms of the Pacific Northwest, brought water to the land in California and Arizona, and developed commerce and industry were "migrants." In 1930 but a little more than a third of the people in California, Oregon, and Washington were born in these States.

These early migrants generally found agricultural opportunities on the diminishing frontier, or in an expanding urban commerce and industry. A place in the economic and social life of their new communities was relatively easy to obtain.

Migrants of the 1930's came under far different circumstances, in a time of depression. There was unemployment rather than a scarcity of labor. Public costs were heavy. There were few opportunities to develop new farms. Investment and development opportunities were curtailed and previous investments were in danger. Newcomers added to such depression problems as relief, unemployment, health costs, and housing.

The movement of displaced Midwestern farm families and the seasonal treks of farm migrants to far western harvests have been widely publicized, with the result that all of the migration of the 1930's has been popularly identified with the migrant farm worker.

Actually, migrants to the far West during that decade were drawn from nearly all occupations. The survey described in earlier issues of the LAND POLICY REVIEW showed that less than one-fourth in the group enumerated in California had previously been engaged in agriculture. In the Pacific Northwest and in Arizona the percentage was one-third. For the group studied there was a marked shift out of agriculture associated with migration to the West.

More than one-fourth of the survey families in California had worked in manufacturing and mechanical industries and 18 percent had been occupied in trade. Their other occupations had principally been transportation and communication, mining, and the professional services. Moreover, the evidence is clear that

there was a general tendency for farmers and farm laborers not to be represented in due proportion among the migrants from all but a few States.

Among the great majority in each group, migration was a direct and purposeful move. It was not preceded by haphazard wandering, or followed after arrival by chronic or even continued itinerancy. Even among those, the less than 15 percent reported as becoming agricultural laborers, more than three-fourths had lived continuously in the same county since they had entered their new State of residence.

The size of the population movement has not created the "migrant problem" of the 1930's. Total population movement into the Pacific States in 1930–39 was smaller than in 1920–29; indeed, the migration of the 1930's was but a fraction of that of other decades.

How the West Grew

During the past, the processes of migration have been the "normal" way in which the far West has grown. Migration can well be regarded as the western substitute for population growth by natural increase. These States have the lowest birth rates in the Nation. Without migration the population would soon start to decline.

Migration in the 1930's added 19 percent to the population of California, 8 percent to Washington, and 11 percent to Oregon. It maintained the absolute number of school pupils in Oregon and Washington and substantially increased them in California. As the majority of the migrants have come from areas of relatively high birth rates, it seems very likely that this new segment of population will, at least temporarily, influence birth rates upward. This may do little more than retard the declining rate, however.

In the past it has been assumed that migration would expand economic activity. Must that assumption be changed? Has the 1930–39 migration depressed or stimulated economic activities in the Western States?

Decline in population growth often has been believed to result in a declining expansion in old as well as new enterprises. Perhaps it is significant that the 12 States which in the 1920's had the largest percentage increase in proportion of national income were also States where there were large increases of population.

For the 12 States in which there was the greatest decline proportional to the country as a whole, in the 1920's, a more than proportional decrease took place in their share of the national income. And this has also been true as well in the years since 1930.

Westward migration during the 1930's has more frequently been regarded as a movement away from depressed areas than as a population movement toward an area of industrial development and relative economic expansion. Yet the relative economic position of the far West in the Nation has kept pace with the expansion of its population. California, Oregon, and Washington combined had, in 1920, 5.26 percent of the national population and received 7.19 percent of the national income. In 1930 these three States contained 6.67 percent of the national population and accounted for 8.66 percent of the national income. By 1938 the three States had approximately 7.24 per-

cent of the population of the Nation, and their share of the national income had increased to 9.34 percent.

It is quite possible that in the aggregate the migration has been beneficial to the economy and welfare of the far West. At any rate, it has yet to be shown conclusively that this migration has had an undesirable effect on the region's economic activities.

From the Nation's point of view, removal to the far West has resulted in a larger proportion of the population of the Nation living in a region of higher per capita income. Moreover, emigration from the Great Plains is consistent with national efforts toward soil conservation, better land use, and a better relationship of population density and natural resources.

A Redistribution of People

In some respects, the 1930–39 migration to the far West may be thought of as a spontaneous adjustment of an unwise distribution of population which took place in the absence of a national policy for soil conservation and population distribution.

Oklahoma, Kansas, Nebraska, South Dakota, and North Dakota make up the area in which occurred the proportionate largest population increases as a result of migration within the United States during the period from 1880 to 1920. The drought and the duststorms of 1934 and 1936, and the attendant human misery, have emphasized that much of this settlement was founded on a type of farming unsuited to the area. The consequences of this unwise settlement can be seen, in part, in the substantial emigrations from this region during the depression decade of the 1930's. Almost one-half of the migration to the far West, as measured by this survey, had its origin in the Plains States.

The great majority of newcomers show every indication of remaining in the West. Since they probably could go back where they came from, it must be assumed that they are remaining because the far West is a more hospitable environment. Moreover, the evidence suggests that for the far West as a whole there was no unprecedented influx of a great horde of unskilled and destitute persons and there may be no important migrant problem in these terms. The continued population growth and, perhaps, the economic development of the far West are still partly dependent upon a continued westward migration similar to that of the 1930's.

The beneficial aspects of the migration, however, should not obscure the fact that very acute problems exist among some migrant families and in some localized areas.

Unguided and unaided by any national or State policy, migration has, in some instances, resulted in the creation of new slums in the West, and efforts at correction can now be made only by the expensive process of buying out individual holdings. Resettlement, in part, has taken place in areas offering little prospects for the future. New farms have been created far from markets and on land which national policy toward soil conservation and flood control would condemn as undesirable.

For some persons, westward migration has resulted in a nomadic life. Some families continuously follow crop harvests over vast areas. This migratory agricultural pattern is undirected and takes place with

little regard to the labor needs of local areas. Two factors—the policy of extending aid only to those who have legal residence in the State, and absence of directly administered Federal relief—have left newcomers in need of assistance in helpless suspension between their legal, but perhaps less desirable, residence and their new communities. Unable to obtain public assistance, migrants often are prevented from achieving permanent resettlement.

The situation of the majority of farmers who migrated to the far West during the 1930's was substantially different from that of most other migrants. In order to follow their occupation they needed, in addition to the skill and experience demanded of others, considerable amounts of capital.

Migrants with little or no capital found some opportunity to start farming by settling on cut-over lands in western Montana, northern Idaho, northeastern Washington, western Washington, and western Oregon. The majority of these settlers obtained less than 1 acre of cleared land at the time of settlement; and their income has been closely associated with the number of acres cleared and of farm livestock owned. Settlers able to purchase or clear an appreciable acreage of cultivable land and stock the farm with livestock have been less dependent on relief and outside sources of income than settlers with small cleared acreage and few livestock.

On the whole, the settlers are a little better off. However, they have had only a meager scale of living. Most have been without many things generally regarded as part of the accepted standard of living. Much of the settlement on cut-over land has been on soils unsuited to cultivation, and probably doomed to failure.

New Ways of Life

During the 1930's, there were limited opportunities for migrants with small capital to develop new farms on irrigation projects. A study of the settlement after 1932 on the Vale and Owyhee reclamation projects in eastern Oregon indicates that this settlement afforded more opportunities for ultimate success in the rehabilitation of the migrants than was true of the settlement which took place on cut-over lands. However, the migrant faced acute problems during the first years of settlement.

For one thing, settlers coming from the Great Plains have had experience in a type of agriculture very different from irrigated farming. Readjustments in ways of farming and modes of living have been necessary. Successful rehabilitation is associated with such factors as proper size and type of farm, adequate knowledge of farming methods, adequate credit early in the settlement period, and proper adjustments of farm production to market outlets.

Relative to the population already in the area, the largest population increases in the far West during the past decade occurred in rural districts. For the first time in their history, a larger proportion of the people of California, Oregon, and Washington were living in rural areas (in 1940) than had been the case 10 years previously. Much of this was due to resettlement of interstate migrants in areas of intensive agriculture such as the Salt River Valley of Arizona; the Sacramento, San Joaquin, Imperial, and Salinas Valleys of California; the Willamette Valley of Oregon; the Yakima Valley of Washington; and

the Snake River Valley of Idaho, as well as on cut-over lands of the Pacific Northwest and on new irrigation projects. A great many of these people sought employment as agricultural workers.

Such opportunity as existed for wage employment in agriculture was not a result of a shortage of workers or an increased demand for agricultural labor. In the aggregate the demand for this type of labor remained approximately constant during the 1930's while the number seeking employment rose considerably.

The structure of western agriculture makes it possible for newcomers to compete on substantially equal terms with previously established agricultural laborers. Large proportions of all laborers in agriculture in the Western States find their employment concentrated on a small number of farms where they work as members of large groups. This creates an impersonal relationship between employer and farm laborer, a condition furthered by the extreme seasonality of employment, by the unskilled character of most of the harvest work, and by the prevalence of the hired foreman, labor contractor, and association manager in the role of employer.

Prior to 1930, seasonal labor demands in most of these areas were met largely by workers who did not remain in rural areas during the off season. In contrast, the great majority of interstate migrants seeking agricultural work have established permanent homes in rural areas. In the absence of available housing within their means or any rural housing program to which they could have recourse they have bought cheap building lots and built improvised housing. The result is numerous and rapidly growing "shack towns."

Approximately one-fifth of the farm workers have been able to obtain continuous work. The great majority are dependent upon temporary work in the harvest season and other seasonal employment. Such work—in the production and harvest of fruits, vegetables, sugar beets, cotton, potatoes, etc.—requires little skill or experience. Hence, women and children frequently are employed along with the men. Because of short seasons, all members of the family are generally unable to find enough work for an income equal to that which could be earned by one fully employed worker. Cash earnings, however, have been augmented to some extent by public aid, by subsistence production, and through the receipt of some perquisites from employers.

Those resettled newcomers seeking employment as farm laborers have made little financial progress since resettlement. The majority had practically nothing upon arrival; what little they have accumulated is represented almost entirely by equities in cheap lots and shack houses.

The present pattern of agriculture in most intensive farming areas on the Pacific coast is such that the majority of laborers could not be continuously employed even though all surplus of labor supply were removed. Moreover, those employed as agricultural laborers (particularly at casual and seasonal jobs) are always vulnerable to competition from the unemployed of all industries.

In conclusion, it seems clear that a program of national assistance in the resettlement and rehabilitation of migrants in the far West is desirable and consistent with national welfare.

The Philosophy of FARM COOPERATION

By ALVA H. BENTON. *"Cooperation can flourish only in a democracy, and a democracy can find much strength in the cooperative organization."*

COOPERATION, like democracy itself, is a philosophy of life. Neither one could endure for long without the active support of men who regard it as far more than a tool to help them earn their daily bread. In fact, education for cooperation may well be education for democracy itself.

Men have progressed because they worked together; the combined effort of many individuals has accomplished what individual effort could not attain. But cooperation as farmers understand it does not include a large part of this unified action.

It would not include the collaboration in a communal society, where the members must obey clan rules and customs in order to get food, shelter, and clothing; nor the activities of a slave society, where masters direct the herd; nor the unified efforts of citizens acting under the orders of a dictator; nor even the common acceptance of laws of a representative government. Respect for the rights and the dignity of the individual is the thing that makes cooperative associations possible.

We think of farm cooperatives as voluntary associations of individuals to sell the product of their labor, or to buy things and services to greater advantage than if those products or services were handled for them by private enterprise. The motive may be an ideal in which cooperation would be a regulator or a substitute for private enterprise and the profit system, or the lure of competing in the profit system and getting some of the real or apparent profits taken by the private middleman.

Many persons help to form a cooperative association and still, for one reason or another, give it little support in the way of business or active participation in its affairs.

Users of cooperative associations are not necessarily advocates of cooperation. They may be just passive participants. The principles involved and the opportunity or obligations to participate in the management of the associations are incidental and unimportant to many members, who resemble the usual small stockholders in a private business corporation.

Those who oppose cooperatives generally are businessmen who regard cooperative associations as organizations which will destroy private business and the middleman. Opposition to cooperation has been reflected in laws that make coop-

erative associations illegal on the basis that patronage dividends are rebates.

Persons indifferent to cooperatives, the bulk of the population when it comes to cooperation, know scarcely anything about it and have little social or economic urge to participate in cooperative buying or selling. This is particularly true of urban populations. There are some consumer cooperative associations in cities, but the membership is relatively small. The potential membership is huge.

Supporters of cooperation in the United States are mostly farmers. They support marketing associations to sell their products and purchasing associations to buy farm supplies and equipment. The many other kinds of cooperative associations that farmers support include those that furnish credit, electric power, and insurance. The latest reports show a membership in buying and selling organizations of more than 3,000,000 and an annual business of more than $2,000,000,000.

In England the consumers' cooperatives report some 7,500,000 members, more than 1,000 retail societies, and an annual volume of business in excess of $7,500,000,000. Reports from the Bureau of Labor Statistics for 1936 indicate a total membership in distributive cooperatives of 459,000. Of the members, more than half were in petroleum associations which show a rapid increase in members, especially in some rural areas.

Cooperation in the English-speaking world has developed from opposite poles. In the United States and Canada, it has been largely a movement of farmers as producers who have sought to increase their income by getting some of the middleman's profit and by increasing the income from their sales through improvement and standardization of their products. In the British Isles, cooperation has been a movement of consumers to reduce living costs by eliminating the profit of middlemen and even by entering the field of production, including farming.

But cooperatives may have even broader functions for consumers. Cooperative plants have been established for preparing fertilizers, refining oil, and mixing feed. These activities may curb monopoly and administered prices and thus have advantages for patrons and nonpatrons alike.

Government support on this basis would be in line with one of the objectives of the Tennessee Valley Authority in producing and distributing electricity. In Sweden, cooperatives have manufactured certain products and lowered prices when private enterprises had established unnecessarily high prices. It will be interesting to watch the progress of newly established cooperative plants in the United States and to note the effect on competitive prices.

Purchasing Cooperatives

History reveals many pitfalls on the road of American purchasing cooperatives. The agrarian movement, which became prominent in the 1870's, gave great impetus to cooperative stores and cooperative elevators and warehouses to market farm products. Because of poor management, lack of capital, and the leaders' overconfidence in farmer enthusiasm for cooperation, the manufacturing establishments and nearly all the stores failed after a short life.

On the consumer's side of the picture is the possibility of a future

trend in the direction of a "cooperative commonwealth" as envisioned by the early English cooperative enthusiasts. Consumers' cooperative organizations under such a set-up would distribute all sorts of consumers' goods and operate manufacturing plants, packing houses, and farms and plantations to produce food.

Conflicting Interests

It appears that farmers who are interested in cooperation should also be concerned with opposition that may be found in their own ranks. In 1937 a measure before Congress provided funds for the study of the effects of consumers' cooperation. Reports indicated that opposition of representatives of farmers' cooperative organizations contributed to its defeat. Some leaders in farmers' cooperative groups feared that cooperative consumer groups would depress farm prices and exert too much weight in bargaining. But it should be noted that farmers' purchasing associations in country towns frequently offer their services to town dwellers as well as farmer members.

The cooperative elevator movement has had a vigorous life, although many individual elevators have failed. In 1930, the number had reached 3,500, but declined to less than 2,500 by 1940. A change from commercial grain farming to general farming and droughts had much to do with this. In order to exist, many cooperative elevators have expanded their purchasing activities. At the same time an increasing number of farmers' cooperative purchasing associations have been formed.

During the past 25 years, the membership in these purchasing associations has grown from less than 60,000 to 900,000 and the annual volume of business has grown from about $6,000,000 to $358,000,000. But during this period, for various reasons, the volume of business of farmers' cooperative marketing associations has scarcely been maintained and the number of cooperative associations has decreased. A marked decline in the number of livestock shipping associations has been due to an increase in the number of packing plants and the direct sale of livestock by farmers to such plants.

City and town consumers and farm producers who advocate and support their representative type of cooperation are challenged to do some clear thinking. Are the two approaches in opposition or are they complementary? When would or should farmers feel that consumers' cooperative associations had gone beyond their proper sphere of activity? Thus far in the United States there has been little occasion for conflict between the cooperative consumer movement and farmer cooperative purchasing or marketing associations that handle some consumer goods. The membership in consumer cooperatives is relatively small. Two factors, somewhat peculiar to the United States, that have held back the growth of consumer cooperatives are the lack of interest in the small savings that these associations may offer, and the mobility of urban workers. Consumers' cooperative associations need a stable, dependable group of patrons, and prospective members are difficult to interest unless they are established members of the community which the cooperative will serve.

Brazil's ADVANCING FRONTIER, 1822–1941

By WAYNE D. RASMUSSEN. *The conclusion of this survey of Brazilian settlement is that "the United States can learn from Brazil's experiments in social planning and give Brazil the benefit of its technical experience in agriculture and industry."*

BRAZIL still has a land frontier. When she declared her independence of Portugal in 1822, she had an area of about 3,250,000 square miles and a population of about 4,000,000. Today she has a population of about 45,000,000 and stands almost alone in the world in having an enormous area of undeveloped, fertile land in zones in which the European can easily become acclimated.

Many of these areas go back to developments of colonial days, when large estates, usually called *sesmarias,* were granted to military leaders, court favorites, and others. These domains, feudal in scope and worked with slave labor or held as cattle ranches, have persisted in some areas until recent times.

Less important but more spectacular were the gold and diamond deposits that were discovered in 1693 and 1729. The rush to the interior mining fields disorganized agriculture and scattered the population widely. Thus, Minas Geraes, an interior mining state, had acquired a population of more than two to the square mile by 1823, but at the cost of abandoned farms and unsettled agricultural land nearer the coast.

By 1823, it is estimated, 11 of the 22 areas comprising the present states (or about 22 percent of the total area of Brazil) had more than 2 persons to the square mile. These states formed a compact group and—excepting Minas Geraes—bordered on the Atlantic. Most of the inhabitants lived on the coastal plain, and there were frontier areas within even the more populous states.

During the next 50 years, the frontiers were pushed back, notably in the northeast and the southwest. The northeastern growth was an extension of the plantation system found in neighboring States and the 1872 census showed that both Maranhão and Piauhy had populations of slightly more than two to the square mile. The more complex southwestern development involved the beginnings of governmental and private colonization and the extension of coffee plantations and cattle ranches.

One of the first governmental steps toward colonization after 1823 was to grant land to Irish and German mercenary soldiers. These troops,

brought in mainly to secure the southern boundary, had revolted, but were subdued and demobilized. Satisfactory provisions for their care had not been made by the Government and most of the surviving Irish left the country. Many of the Germans, however, remained. Some were settled in Santa Catharina; most of them in Rio Grande do Sul around the colony of São Leopoldo, founded in 1824. They were placed on small farms in the mountainous areas, because the coastal plain had been taken up by plantations and the plateau by cattle fazendas. Some of the settlements were successful, but the effects of the revolts and the emigration of many Irish and German soldiers discouraged further efforts to promote free white immigration. Europeans, hearing of the dissatisfaction of the first groups, turned their attention to other areas open to settlement.

Private settlement came mainly through planters' efforts to get workers for their estates. The Negroes, although destined to contribute much to Brazilian civilization, were involuntary immigrants. The free white workers who were brought in usually entered into a partnership contract with the owners.

This contract, known as the *parceria,* was devised by the Brazilian statesman, Senator Nicolau Vergueiro. Under the terms of the contract, the landowner advanced the colonist funds for passage, settled him on the land, and maintained him until the first paying crop was marketed. The advances were repaid from the laborer's earnings, and net profits from the crops were divided equally between colonist and landowner. The parceria was first used extensively in São Paulo and became the normal type of contract between the large landowner and colonist.

By 1872, as a result of immigration and natural increase, Santa Catharina and Rio Grande do Sul in the south each had a population of slightly more than 4 to the square mile. Altogether, 16 states and districts, comprising 33 percent of the total area, had 92 percent of the population. The frontier line, considered by states, ran southwest from Maranhão, made a sharp eastward turn around Paraná, which had between 1 and 2 persons to the square mile, and then swung back between Paraná and Santa Catharina.

Paraná increased rapidly in population between 1872 and 1890. Settlers of German descent pushed northward from Santa Catharina, especially after 1873, and settled on the plateau. This movement was carried on by private initiative. A public colonization scheme was instituted in 1875 by Governor Lamenha Luis. The Government bought several large estates near the town of Curitiba from their Brazilian owners, marked them off into small plots, and built roads through them. It then helped immigrants, mostly Italians and Poles, to enter the country and settle the plots. The entire scheme was a marked success, and similar settlements were founded in other parts of the State. As a result of these State and private settlement efforts and natural increase, Paraná, according to the 1890 census, had a population of 249,491 persons, or more than 3 to the square mile.

By 1890 only 4 States, comprising 63 percent of Brazil's present area, had populations of less than 2 to the square mile. These were Goyaz,

Matto Grosso, Pará, and Amazonas, all interior States except hot, jungle-covered Pará. The frontier line, by States, ran from the northeast to the

southwest. But, as before, the bulk of the population was within a few hundred miles of the Atlantic coast and there were unsettled areas in many States. The census of 1900 showed a total population of around 17,330,000, an increase of 3,000,000 over 1890.

Before the next census, Brazil obtained Acre, which included some of the headwaters of the Amazon, by treaty, purchase, and an indemnity to Bolivia. Brazil built a railroad around the falls of the Madeira River, but Acre lost some of its importance when the wild-rubber industry declined after 1912. The 1920 census credited the territory with a population of 92,379.

The 1920 census, thus far the most complete and reliable, placed the total population at 30,635,605, more than 7½ times that estimated for 1823 and 3 times that shown by the 1872 census. About 5 percent was foreign-born in 1920, compared with 4 percent in 1872 and 7 percent in 1900. In comparison, 13 percent of the 1920 population of the United States was foreign-born.

Such a small number of foreigners in such a vast territory as Brazil indicated a need to facilitate immigration to develop the country. The state of São Paulo, which had been actively aiding immigration for some time, had in 1920 over 52 percent of Brazil's foreign-born in its 3 percent of Brazil's area. The four southern States of São Paulo, Santa Catharina, Rio Grande do Sul, and Paraná, with 10 percent of Brazil's area and 27 percent of her total population, had 68 percent of her foreign-born population. The federal district, Rio de Janeiro, and Minas Geraes, 7½ percent of Brazil's area and bordering on the southern states, had another 24 percent of the foreign-born. That is, foreigners had been settling in the southern and south-central areas in preference to the older, populous, northeastern states, the hot and humid Amazonian states, or the Matto Grosso plateau.

Certain foreigners tended to settle by nationality groups and thus impede assimilation into the Brazilian culture. Of the foreign-born residents of Brazil in 1920 of known nationality, Italians made up 36 percent, Portuguese 28 percent, Spaniards 14 percent, Germans 3 percent, Turks and Arabs 3 percent, Japanese 2 percent, Uruguayans 2 percent, Poles 2 percent, Austrians 2 percent, and many smaller groups the remainder. Only 3,439 had been born in the United States. These percentages are comparable with the totals for immigrants over the period 1820–1920, except that fewer Japanese and Turks, and more Russians and Italians in proportion, had entered the country over the longer period.

Rural Holdings

The average rural holding in Brazil in 1920 contained 667 acres and was valued at $3,671. The average for establishments owned by native-born Brazilians was 657 acres and $3,408; for foreign-born owners, 336 acres and $3,228. The average rural properties held by those born in Uruguay, the United States, and England were 1,383 acres, 10,262 acres, and 2,716 acres, and worth $12,018, $21,596, and $22,650, respectively; by those born in Germany, Italy, and Japan, 195 acres, 188 acres, and 91 acres, and $2,262, $2,923, and $973, respectively. The English and the Americans (both

North and South) were generally large landholders, and the continental Europeans and Japanese were small landholders. But in total value of rural establishments, native-born Brazilians held 78 percent, Italians 4 percent, and other nationality groups far less.

Rural holdings made up only 20.6 percent of Brazil's total area; the remaining 79.4 percent was public or unclaimed land. Even more notable, the 1920 census showed only 0.8 percent, or 16,412,523 acres of cultivated land, and 19.8 percent, or 416,271,130 acres, in woodlots and pastures.

Although the cultivated area of Brazil was still proportionately small, the frontier line had moved westward across the State of Goyaz and now ran more directly from the northeast to the southwest when traced along State boundaries. Goyaz had just over two persons to the square mile, while Amazonas, Matto Grosso, Pará, and Acre, 57 percent of Brazil's area, still had less than two persons to the square mile.

Railroads were important in opening up the West in the United States, especially after the Civil War. They were of much less importance in Brazil, although the intensive agricultural settlement of many areas followed the railroads. In 1920 Brazil had 17,730 miles of railway, and 20,182 miles in 1930, about two-thirds the mileage of the United States in 1860. Roads and airlines helped counterbalance the lack, and waterways had always been important. Nevertheless, a shortage of transportation facilities has hindered the development of the frontier.

During the World War, immigration fell off, and in 1918 only 20,501 entries were recorded. In 1920 there was an increase to 96,162. The average for the 10 years from 1921 to 1930 was 87,015, a small number for a country with such wide unsettled areas as Brazil. A notable development in this period was the increase in Japanese immigration. One authority, J. F. Normano, has said that Japanese immigration falls into three periods: Importation of contract laborers before the World War; experimental colonization from 1915 to 1924; and planned, systematic colonization since 1924. In 1915, there were 13,505 Japanese residents in Brazil. By 1920, there were 34,208. By 1925 the number had increased to 49,400. During the next 5 years, an average of 11,820 Japanese arrived each year, and in 1930 more than 100,000 resided in Brazil.

By 1930 the frontier line had again shifted. The revised population estimates show that Pará had a population of over 2 to the square mile, much of which was within 50 miles of the banks of the Amazon and over one-fifth in the capital city of Belém. The frontier line by states now ran along the eastern boundaries of Amazonas and Matto Grosso, generally in a north and south direction. At the same time, there seemed to be a certain amount of social regression in the Amazon basin, some settlements being abandoned and some of the Indians losing what little contact they had had with white civilization. The population increase in Brazil from 1920 to 1930 was due mainly to natural increase rather than to immigration.

Immigration again fell off after 1930, due possibly to the world depression, and to growing nationalism with a corresponding discouraging of emigration in many countries.

Only 31,410 entered in 1931; 34,683 in 1932; 48,812 in 1933; and 50,471 in 1934.

The year 1934 was the last of free immigration into Brazil. Previous laws had, in general, tried to encourage the entrance of immigrants of all nationalities, but this policy was definitely reversed in the constitution of 1934. Giving as a reason, the necessity for the "ethnic integration" of the immigrants, the total for any country was not to exceed 2 percent of its nationals resident in Brazil during the previous 50 years. The greatest effect was on the Japanese, their quota in 1936 being only about one-sixth of their 1934 immigration. The total immigrants of all nationalities entering Brazil in 1935 and 1936 were 35,913, and 12,773 respectively.

The constitution of 1934 did not endure long, for on November 10, 1937, Dr. Getulio Vargas promulgated a new constitution. This was supplemented by Presidential decrees. The first decrees governing immigration, issued in 1938, had basic provisions similar to those in the 1934 constitution. In addition, 80 percent of the quotas had to be farmers, and not over 25 percent of the immigrants in any colony or settlement could be of the same nationality. The quota for all immigrants was set at 79,020. The total entering in 1939 was 22,668.

Despite the declining immigration, the frontier was advancing. Population estimates for December 31, 1939, showed that Acre territory had slightly more than two persons to the square mile, the first instance of the frontier jumping intervening States in its westward advance. This left Amazonas and Matto Grosso, 39 percent of Brazil's area, the only states with fewer than two to the square mile. But just as in the United States, where more land was homesteaded after 1890 than in previous years, many Brazilian States besides Amazonas and Matto Grosso still had large areas suitable for settlement.

On March 19, 1941, a decree-law further restricted immigration and provided that permanent visas would be issued only to those intending to follow agricultural pursuits, to those of exceptional technical talent, and to those who could bring into the country at least 400 contos of réis (approximately $24,200).

Many authorities believe that Brazil should encourage immigration,

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Thus, economic efficiency, considered nationally, must be measured in terms of the per capita product with due consideration for displaced workers as well as those remaining in agriculture.

** * * agriculture is dynamic, not static, * * * technical progress is not a series of unrelated details but grows from the response of producers to a combination of new opportunities.*

—TECHNOLOGY ON THE FARM

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particularly of farmers. A Brazilian governmental publication in 1940 said, "A study of the population of this country by any demographic criterion would conclude that the urgent need for a rapid increase depends principally on a greater and more intensive flow of immigration."

Preston E. James, in an address before the Brazilian Geographers' Association in 1939, said: "The process of transforming the potential wealth of the Brazilian interior into economic values would require the efforts of many men * * * It would be necessary to change from the traditional system to a system of permanent colonization, an immigration like the one which took place in the United States between 1870 and 1890."

The entire question of immigration, however, presents several problems. One late estimate places Brazil's cultivated land at only 4 percent of the area, yet, at the same time, some of the best agricultural and forest land has been injured by exploitation. Exploitative agriculture also has meant that as new western land was opened, the older areas suffered a slow depopulation.

Agricultural surpluses, too, have influenced the trend of settlement. For instance, less than half of the potential coffee land in São Paulo is used for coffee, yet the world consumption appears to limit the industry and discourage further planting of coffee trees. Unless other crops are introduced, as cotton has been in sections of the area, the land will remain unsettled for some time. Surpluses and transportation problems together have made the intensive agricultural settlement of Matto Grosso unprofitable and have kept it a frontier area, just as climate and jungle have made Amazonas unattractive for agriculturalists.

The farmers themselves differ from those who migrated to the United States in the nineteenth century. They do not wish to go to an isolated frontier and carry on a subsistence agriculture; the world offers greater opportunities elsewhere. Nor under present world conditions would it be advantageous to Brazil to have her unclaimed land settled by isolated frontiersmen on a subsistence level. Social and economic integration are essential.

In spite of the similarities of the westward marches in the conquest of the frontier in Brazil and in the United States, there are many differences. Among the more important of these differences are the system of colonial land grants in Brazil; the early limitations on Brazil's trade and its greater distance from European markets; greater natural obstacles to settlement and transportation in Brazil; and the growth of world agricultural surpluses in addition to the change in immigrant types before the frontier conquest was completed in Brazil. The frontier of land settlement in the United States ended in 1890; the Brazilian frontier now includes one of the largest areas of unsettled, cultivatable land in the world.

But even as the frontier of land settlement is being pushed back in Brazil, the industrial frontier is opening up. How this will affect agriculture and land settlement remains to be seen. The Brazilian Government is making vigorous efforts to cope with its problems; the United States can learn from Brazil's experiments in social planning and give Brazil the benefit of its technical experience in agriculture and industry.

The Rural Church
IN ONE DAKOTA COUNTY

By RAYMOND HATCH. *Like all other institutions, the country church of the old days has felt the impact of newer times. Here are some aspects of its decline in importance, together with the suggestion that for the future, the rural church will follow the lines of the emerging town-country communities.*

A FUNDAMENTAL reorganization of rural neighborhood and community life is in process in Kingsbury County, South Dakota. Some evidences are dissolution of the neighborhood and its decline in importance, increased concentration of services in village centers, and growing awareness among farm and town inhabitants of "belonging to" a new and enlarged form of community with the trade center as its hub.

The churches of Kingsbury County, like all other institutions, have been affected by this development. This fact is demonstrated most clearly by the increasing number of farm families who attend church in village centers. All in all, approximately two-thirds of all farm families in the county attended town churches in 1940, whereas only slightly more than one-fifth were in attendance at open-country churches. The remaining farm families—somewhat more than one-eighth—did not attend church.

Of the 1,290 farm household heads in Kingsbury County, 1,126, or 87.3 percent, expressed a preference for some denomination. The Lutheran Church was the denomination of 43 percent of all farm operators; 13.7 regarded themselves as Methodists; 10.3, Congregationalists; 8.3, Catholic; and 6.2, Presbyterian. Five and six-tenths percent of the farm operators expressed preference for a denomination other than one of the five listed, while 12.7 percent had no denominational preference.

One of the interesting relationships substantiated by the study of Kingsbury County churches is that between nationality background and denominational preference. Nationality groups tend to cling to the dominant church, or churches, of their native land. It was found that almost 69 percent of all farm household heads of Scandinavian descent and nearly 34 percent of those of German origin expressed preference for the Lutheran Church. Almost three-fourths of all farm household heads of the county were found in these two nationality groupings, Scandinavian accounting for 46.3 percent and German 26.7 percent. The Catholic Church was predominant among the British—and the Irish—group with 24.1 percent, followed closely by the Methodist, Con-

gregational, and Presbyterian denominations. The latter churches enlist many of their followers from among the English and Scotch.

Later Generations Change

More than any other nationality groupings, the preferences of the American and mixed groups are evenly distributed. These two groups consist of persons who no longer trace their nationality to the country of origin. This would seem to indicate a tendency for third, fourth, and succeeding generations to modify traditional church practices, along with other features of the foreign culture pattern.

The accompanying map shows that 11 open-country churches were still functioning in Kingsbury County in 1940. Yet they were attended by only 265 of the 1,290 farm families—about 24 families per church. During the early years of settlement in Kingsbury County, the country church was a very important institution. In addition to ministering to religious needs of pioneering families, it frequently served as the virtual center of neighborhood group life. A number of factors have been at work in recent years to undermine the position of the country church, although here and in all parts of the country, as an institution, it continues to make valuable contributions. Among these are increased ease of transportation, break-down of country neighborhood groups, rising tenancy rate, and heavy losses in the rural-farm population through outward migration (between 1930 and 1940 the population of Kingsbury County dropped off 15.4 percent).

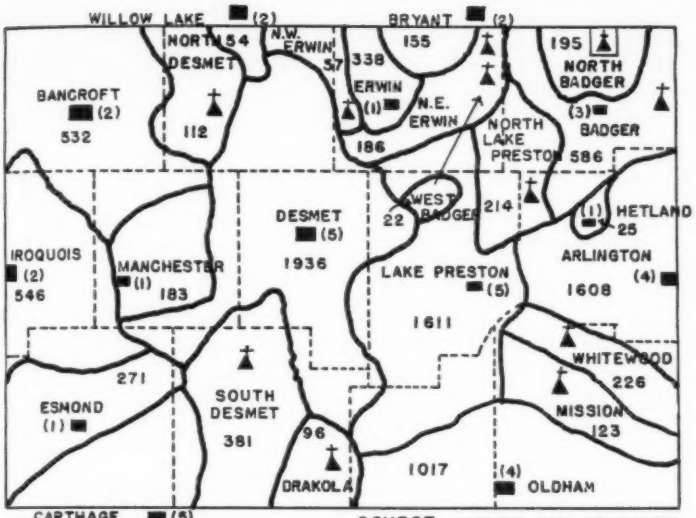
It has made many real contributions in the past, and continues to do so in all parts of the country.

The open-country church has always thrived best in localities where considerable nationality solidarity, with consequent similarity of religious views, exists. The Scandinavians, it has been noted, comprise the most numerous nationality group in Kingsbury County. In each of the 6 easternmost townships of the county they constituted in 1940 over 50 percent of all farm operators, with their numbers ranging as high as nearly 76 percent in Badger township. In the light of these facts, it is not surprising that 7 of the 11 country churches are Lutheran, and that all 7 are located in the eastern half of the county. Germans hold a numerical advantage in several of the western townships. They display less unanimity of church preference, however, and are not so readily inclined to support country churches.

Many of the difficulties of the open-country church can be attributed to continued emphasis upon denominationalism. Many farm families, especially in areas of heterogeneous nationality composition, are not included within any open-country congregation. These families either go to a village church or they do not attend church at all.

Operating as they frequently do without united community backing, country churches find themselves at a distinct disadvantage. Ministers are forced to divide their time and services among two, three, or even more congregations. All but one of the open-country churches in Kingsbury County—North Badger—had nonresident pastors in 1940.

Because the villages, with their more compact settlement and wider



SOURCE: COUNTY AND COMMUNITY SOCIAL SURVEY.

OPEN COUNTRY CHURCHES.

OPEN COUNTRY CHURCH WITH RESIDENT PASTOR.

(4) KINGSBURY COUNTY TRADE CENTERS WITH THE NUMBER OF CHURCHES IN EACH.

range of views, usually support several denominations, they have been able to attract large numbers of farm families. Twenty-nine churches in 11 villages of Kingsbury County, as well as 11 churches in 5 villages outside the county, were attended by Kingsbury County farm families in 1940. As suggested by the map, the areas served by village churches are appreciably more extensive than those served by open-country churches. While it is not possible to make a comparison with the situation that existed at an earlier date—let us say, 20 years ago—it is apparent that the village churches are attracting increasingly large numbers of farm families from constantly expanding areas.

However, a considerable portion of the Kingsbury County population is still not being reached by existing church units. Only 754, or 58 percent, of the farm household heads were church members, although, as previously noted, over 87 percent of them expressed a preference for some denomination. More than 13 percent of the farm families never attend church. In three townships—Badger, Spring Lake, and Esmond—church membership was extended to fewer than 50 percent of all farm operators.

Paradoxically, a rather serious problem of over-churching exists side by side with the unchurched condition described above. Forty churches were operating in Kingsbury County in 1940, although the recommended norm of one church per thousand of the population as advanced some years ago by the National Home Missions Council would call for only about 11.

Adaptation of All Services

How can the Kingsbury County church structure be reorganized to meet most adequately the demands of all town and country residents?

The most apparent need is for a decreased emphasis upon denominationalism. Comity may be attained through any one or a combination of the various methods proposed in recent years. The trend toward adaptation of all types of institutional services along lines of the emerging town-country communities points the way. The tendency for farm families to attend village churches indicates a step in this direction.

Information

It will not be doubted, that, with reference either to individual or national welfare, agriculture is of primary importance. In proportion as nations advance in population and other circumstances of maturity, this truth becomes more apparent and renders the cultivation of the soil more and more an object of public patronage. Institutions for promoting it grow up, supported by the public purse; and to what object can it be dedicated with greater propriety? Among the means which have been employed to this end, none have been attended with greater success than the establishment of boards, composed of proper characters, charged with collecting and diffusing information, and enabled by premiums and small pecuniary aid, to encourage and assist a spirit of discovery and improvement. This species of establishment contributes doubly to the increase of improvement, by stimulating to enterprise and experiment, and by drawing to a common center, the results everywhere of individual skill and observation, and spreading them thence over the whole Nation. Experience, accordingly, has shown that they are very cheap instruments of immense benefits. —GEORGE WASHINGTON

Post-War Planning--
LETTERS TO THE EDITOR: II

HERE ARE *additional provocative letters growing out of the July issue, when the magazine was dedicated to a discussion of agriculture's place in post-war America, and the steps that need to be taken to deal with the problems of that time. The first group of responses to the July issue was printed in the September number. Others will follow.*

IF WE ARE to have a sound agriculture we must think more about the economics of the whole country and less about agriculture itself.

The economic welfare of the farmer depends first upon the buying power of the nonfarm population, and second upon the freedom of our workers to engage in the production of goods most needed. The first of these propositions has been quite thoroughly discussed at various times and places and requires no further elaboration on my part. The second proposition, however, has not, in my judgment, received the attention it deserves.

If large numbers of people are forced out of nonfarm industries because of restrictions on employment and are thereby compelled to engage in the production of agricultural products in excess of the amount actually needed, no amount of "farm relief" will meet the situation.

Most of our more pressing farm land use problems are due to this pressure from an excess farm population that is not needed in farm production and that would not be on the farm if other opportunities were available. Much has been said about "economic units" and "family-sized farms" but if there are too many farm families, these goals become impossible. An abnormal number of economic units is, in my judgment, a symptom of an unhealthy condition elsewhere. That condition is restricted employment in nonfarm industries. By restricting employment I refer not merely to labor policies, but restrictions on employment resulting from the policies of employers and in many cases of the Government itself.

Most farmers and farm leaders realize these problems, at least in a general way, but they have not yet realized the responsibility which rests upon them in the solution of these problems. The success of government employment policies on nonfarm industries depends upon the possibility of pushing the displaced labor onto the farms. The initiative in changing the situation must therefore come from the per-

sons damaged. It cannot be expected to come from those benefited. In this case the persons damaged include the displaced labor and the regular farm population with which this displaced labor is forced to compete. The displaced labor is for the most part poorly organized and in a weak economic and political position. This therefore leaves the farmers and farm leaders to carry the burden.

Farmers have generally been resentful of labor union policies. Insofar as these policies tend to restrict employment, such resentment may be justified. Farmers, however, do not generally recognize the fact that they can not possibly prosper from cheap or abundant labor, even though it may seem to their advantage at the moment.

Farmers and farm leaders must therefore pay less attention to what the Government "does for the farmer" and give much more attention to those governmental activities that affect the buying power of the nonfarm population, and above all, to those policies which affect the freedom of movement of population between the farm and city.

—E. L. Potter,
Chief, Division of Agricultural Economics, Oregon State College.

Between Us and Chaos—Planning

A special Pulitzer prize ought to be awarded for the July issue of Land Policy Review as the most hopeful U. S. D. A. publication of the year.

It seems obvious that only planning can save us from chaos. If there had been adequate world planning, probably this war would not have happened. In fact, is it not possible that the picture of an adequately planned world system may be the solvent that is needed to end the whole ghastly break-down? Wilson's promise of a better world order had a good deal to do with actually stopping World War I, as I recall it.

The danger, it seems to me, is in thinking that we must wait until the end of the war for our plans. Wars have a habit of dragging on, pulling us down into chaos. Then at the end of the war we are too exhausted to put our brave plans into effect.

—H. B. Stevens,
Acting Director of Agricultural Extension Work, University of New Hampshire.

Communal Centers, Reforestation

Undoubtedly, this planning for post-war agriculture should be done with a great deal of thought because, as you may well assume, unless such planning is carefully accomplished, there will be a surplus labor which agriculture might be expected to absorb unless the industrial division remains at least 50 percent active based on the present method of commercial production.

One of the greatest fields of activity in which a large portion of labor could be absorbed is the reforestation of our millions of acres in which we could well plan an organization by planting young trees to such a large extent that it would provide us with an abundance of raw mate-

rial for paper mills and such products as require cellulose in their manufacture.

In planning the future of agriculture so that it might enjoy more fully the American standard of living, I believe that small community centers should be suggested in which, let us say, four adjacent farm owners should be encouraged to plan their homes in a central region while the outlying farm land should be equally accessible from this communal center. It would also afford such a group an economic use of machinery and the advantage of a small community.

—John E. Nicholas,
Professor of Agricultural Engineering, The Pennsylvania State College.

Put It Up to Farmer Planners

When I finished reading the July Land Policy Review, I had a strong feeling that here was a general policy and an action program of merit. Why not submit the Maris "plan" to a number of land planning committees throughout the country and ask them to give the readers of the Land Policy Review an estimate of how it would work in their counties? Why not submit the Eisenhower "shelf of work" and the Hendrickson "labor policy" to other county committees? Anyone who reads the first four articles in the July Review should be convinced that we need to plan for the peace. But we need to do more than just talk about it; we need blueprints, legislation, and education. For this action program the last four articles in the Review are an excellent start. Let's "roll up our sleeves" and do something about it.

—W. G. Murray,
Department of Economics and Sociology, Iowa State College.

Looking Toward A Better Agriculture

We must look forward to a better agriculture and lay plans for achieving it. If we do not, we may expect it to deteriorate, for this is what happens to any social order that is not continually improved.

All groups, farmers being one, must develop an ever increasing sense of the importance of the public welfare. In this matter I feel that no other group excels our farmers. But there is a tendency toward group consciousness, to the exclusion of a consciousness of the welfare of all, which has dangerous implications. I think farmers as a group must stand up for their just rights and interests, but as they do so I would like to see them lead in those procedures which are designed to protect and promote the general welfare. Such action, I believe, is essential in bringing about a still better agriculture.

I do not see how we can hope for a better agriculture if there is no progress in the efficiency of production. At present the spread between the most and the least efficient farm producers is uncomfortably wide. Doubtless it will continue to be so for many years to come. Human efficiency varies widely in all lines of work, and it may seem that we are talking about a hopeless something, but I think not. Our soil, our

greatest natural resource, which suffers at the hands of the inefficient, must be protected in behalf of the general welfare as well as in behalf of farmers themselves. In recent years, the Federal soil-erosion service has accomplished great things in checking soil losses. What it has achieved in a material way will in the long-time planning be small in comparison with what it has achieved in building up "soil protection mindedness" among our farmers.

We cannot successfully plan for a better agriculture unless we also plan for a better farm life. Many American farmers, as judged by the standards for human competency, are very able people. But we must look forward to conditions where there is no better place for the competent man to operate than on the farm, provided he loves the open country and enjoys farming more than any other occupation he knows about. These conditions must include both economic and social opportunities. Even then we shall have our problem in protecting our land plant for there will still be a fair share of land occupiers who either cannot or will not employ conservation methods.

We have not yet found the recipe for the full protection of our land plant. I have always felt that education, the fullest possible development of technical, economic, and social accomplishment in farmers is a feature of it which under no circumstances can be neglected. Perhaps still more will be required, possibly some sort of government subsidy based on the premise that the land, although an individual investment for operative purposes, is also a national investment without which the Nation cannot be maintained in perpetuity.

—W. C. COFFEY,
Acting President,
University of Minnesota.

Good Business Methods Stressed

Mr. Fleming and Mr. Tolley are exactly right in urging all of us to take a look ahead toward a solution of farm problems.

Many of us remember the hectic days following World War I and it is not too early to begin now to make plans to prevent a similar recurrence. I do not know that I can make any suggestions that will contribute further to the thinking about the broad idea of achieving a better agriculture. It seems to me that we have certain machinery now which can be used to prevent or at least to soften the hardships which would certainly be encountered without making plans now. We in extension work in Massachusetts have cautioned our farmers against undue expansion and against overborrowing, which are at least two things many farmers did in the earlier period. We believe that if farmers themselves will put their houses in order now and use good business methods, so far as credit is concerned, that they will be in a good position to meet economic conditions which I believe will be very difficult in spite of what we may try to do. I do not believe that we have learned as yet how to prevent depressions and hard times in spite of Mr. Fleming's calling this kind of thinking an enemy of morale. I believe, however, that we have learned many things out of our last experience and it does not

necessarily need to result in a larger and unhappier mess this time. I believe, however, that it will be an unhappy mess just the same.

We are encouraging our farmers to produce to capacity, which I think is good farm management. We are suggesting that they utilize their present barn space for productive dairy cattle, laying flocks, etc., rather than to build new buildings and go in debt for them. During the last debacle such farmers came through much better than those who expanded and who went heavily in debt.

—Roy E. Moser,
Extension Economist,
Farm Management,
Massachusetts State College.

More Specific Methods Needed

I have read the articles in this issue of the Review and find myself in substantial agreement with the authors of the first five articles. My chief comment concerning the article by Dr. Tolley, as well as the articles by others of the first five, is that they do not deal with the methods involved in getting specific plans into operation and then keeping them going. There is constant danger that people who have been encouraged to build terraces will farm over them or plow them down as soon as Government control relaxes a little. Also, standards of living, particularly with reference to diets, may be improved temporarily as a result of governmental programs and governmental assistance. However, it would seem desirable that many of those now being helped to do these things would do them of their own accord if and when their incomes permit this. To accomplish this, a broad educational program will be required. It seems to me that the articles would be strengthened if attention were called to the need for educational work along these lines. In many cases, the educational work would need to be of a vocational character and probably at high-school level.

I have several questions concerning the article by Paul V. Maris. In the first place I question whether a long-term lease is the answer to stability of tenure. Long-time tenure is highly desirable and in my judgment is best obtained by the lease that gives opportunity for adjustment at frequent intervals. This opportunity for frequent adjustments makes the lease essentially a 1-year lease. The attitudes of landlord and tenant are what determine the length of tenure of the tenant. It seems to me that it is more important to stress these relationships between landlord and tenant rather than to urge long-time leases.

A second point concerning the article by Mr. Maris pertains to the proportion of all farmers who would be tenants under the ideal situation which he pictures. He would have 1 million tenants among 6 million farmers, or a tenancy percentage of 16⅔. Assuming that the average farmer is a farm operator for 42 years during his lifetime (ages 21–63), the usual farmer would have to spend 7 years as a tenant and 35 years as an owner to make it possible for only one in every six farmers to be a tenant and the other five to be owners. I seriously question whether a young man can acquire sufficient operating capital and sufficient funds for down payment

on a farm by the time he is 28 years of age, or in 7 years after he starts as a farm operator. This age may be older than 28 years if he starts at a later date. If he starts at a later date, his years as a farm operator will be lessened. If they are reduced to 36 years, then the usual operator would be a tenant for 6 years and an owner-operator for 30 years if the ratio of one tenant to five owners is maintained.

One wonders—if farmers accumulate funds this rapidly in their younger days, will they continue to make savings at this rate as they become older and will this tend to be reflected in land values and in sizes of farms? It seems to me that there are some very practical problems involved in the suggestion that not more than one-sixth of the farmers should be tenants.

The articles by Maris and Hendrickson are somewhat divergent in viewpoint. Mr. Maris apparently assumes that there will be relatively few farm laborers, while Mr. Hendrickson apparently assumes that there will be a considerable number of farms sufficiently large to employ a number of men.

The articles are stimulating and I enjoyed reading them.

—W. E. GRIMES,
Head, Department of Economics and Sociology, Kansas State College.

The Need for Careful Thought

It is not to be expected that every one will agree with every statement appearing in each of the presentations. However, through the articles the authors focus our attention upon conditions, problems, and possibilities which definitely relate to the physical, economic, and social well-being of American agriculture.

The articles not only present interesting and pertinent information but they contribute to our thinking about ways and means of achieving a better agriculture and rural life. It is highly desirable that all of us give careful thought to planning for post-war American agriculture. This issue is a valuable contribution.

—H. H. KILDEE,
Dean of Agriculture, Iowa State College.

The Labor Situation

What seems to me to be of most immediate concern regarding the use of land is how to continue our production without diminution during the period of the national emergency and at the same time give those who carry on this phase of our national defense fair wages for their time with fair return on their capital. Few realize the very critical labor situation with farmers. There are many fields of uncut hay and weeds in our dairy regions right now due to the help shortage.

At the present time the price of milk to dairy farmers in the New York milk shed this past year did not return them as much for their time as their hired men cost. I do not think we need to plan too much for post-war agriculture. The Government does need to be careful about fixing ceilings on the prices of farm products. It may result in rank injustice to the farmers.

—E. G. MISNER,
Professor of Farm Management, Cornell University.

Oregon Tackles
THE FOREST PROBLEM

By J. R. BECK. *After so much viewing with alarm and there-ought-to-be-a-lawing, it's encouraging to read of a State that has gone ahead to protect its great forests in the midst of unprecedented logging operations.*

TIMBER - RR - R! Over the uplands, over the valleys, over 28,000,000 of Oregon's 61,000,000 acres, the woodsman's cry of warning and elation sounds as never before.

Thousands of forest patriarchs, 150 to 600 years old, crash to the ground and are sawed up to satisfy new construction demands. Along highway, railroad, trail, logs roll to sawmills in unprecedented volume. And, praise be, in this new logging era, Oregonians are united in a drive to conserve their forest resources, the greatest of all timber stands in the country, while contributing to the defense program.

For the State's foresters and timber operators believe that with all the acres of virgin timber, it is still possible to establish an effective sustained-yield program.

Decreasing tax bases and closed sawmills in the 2,000,000 acres already logged or burned over finally have aroused the people of Oregon to the critical problem confronting the State. This has resulted in the enactment of what is now accepted as the most comprehensive and forward-looking legislation of any State for the conservation and perpetuation of the forests. Most of these acts have been passed within the last decade, and more specifically in the last session of the Oregon legislature.

Lessons of the past are clear enough. In one county—Clatsop—logging operations have caused a drop in the assessed valuation there from $41,000,000 to $15,000,000 in the past 20 years. Most of this loss was in timber values, but associated with it was the loss of timber manufacturing plants and allied values. Clatsop County suffered first because of the accessibility of its timber, but with the coming of good roads and truck transportation, operations have been fanning out all over the timbered areas of the State.

The "cut and get out" policy resulted in the almost complete deforestation of all sections logged in the Douglas fir region up to 1940. Of the 1,500,000 acres in Oregon's Douglas fir region that have been logged or burned, 750,000 acres are classed as poorly stocked or nonstocked lands. Of this total, 500,000 acres were logged before 1920. An important contributing factor, along with clear cutting, has been the devastation caused by fire 5, 10, 20 years after logging. Many restocked areas were again denuded in this manner.

15 New Laws

With this picture in their minds, the members of the Oregon Legislature passed 15 progressive pieces of forest legislation at the 1941 session. State and county officials and technical foresters of both the State and the United States Forest Service, cooperating with taxpayers and farmers through their county land use planning committees, built up such a background of factual information as to the needs and desirability of such legislation that there was scarcely a debate when the various bills were being considered.

There are 13 national forests in Oregon, comprising more than 13,000,000 acres. Even so, the bulk of the saw timber is in private, county, or State ownership. It is on a vast area of some 12,000,000 acres that the newly enacted laws and earlier ones are aimed to make effective for future generations some kind of a sustained-yield program.

Sustained Production

Governor Charles A. Sprague, in introducing the proposals for legislation, stated: "The bills seek to protect existing forests by means of stronger regulation for fire prevention and suppression, to enforce minimum standards in forest practices to allow for natural reforestation, and to facilitate acquisition of cut-over lands for the growth of new forests. This forest problem is one of acute importance, and delay in action will be damaging to the future of Oregon. By adoption of progressive policies now we may successfully bridge the transition period from the 'cut and get out' practice of the past to a stable economy based on sustained production in the State."

The first forestry legislation in Oregon, adopted in 1864, made it a misdemeanor to allow a fire to get out of control. In 1911 the State Board of Forestry was organized, but until 1929 the function of this board was to control and suppress fires. In that year the Oregon Reforestation Act, which more properly should have been called the "forest tax law," was passed. This purely tax measure was designed to encourage the growing of another forest crop on lands already logged or burned-over. It provides for an annual tax of 5 cents an acre in the Douglas fir region and 4 cents an acre in the pine region. At the time of harvesting crops, an additional tax levy of 12½ percent of the stumpage value of the forest crop is made.

The next step in forward-looking forest legislation, resulting from the realization that land use is an essential part of forestry, was the passage in 1937 of the classification law known as Chapter 381, Oregon Laws. That law provided for the appointment of county committees with authority to classify all forest lands, except those federally owned, into three groups—forest lands, intermingled forest and grazing lands, and lands best adapted to grazing or agricultural development.

This legislation was presented and passed largely as a result of the land use planning activities in Coos and Curry counties, in the Douglas fir belt. It was in these counties that the first concerted effort was made to determine which deforested lands were best suited for development for grazing and which ones should be reforested.

A significant land use development from this 1937 law has been the establishment of grazing districts on

logged-off land in the coastal counties on areas that the people of the county feel are best suited to this form of agricultural enterprise. In most instances the county land use committees indicate the areas that they think are most suited to grazing and then the formal classification committee takes the necessary legal steps to make such classification binding.

Taxes

In general, forest officials who are familiar with the Oregon problem recognize that many of these deforested acres might best serve society by being utilized for some form of agriculture, such as grazing. This awakening to such use has resulted in the cooperation of State, county, and private forest agencies with local people in the construction of fireguards around such grazing areas so that the brush and slash can be burned before seeding for range use. The cooperation is not only one of agreement, but also one of financial assistance.

With the disappearance of timber values through logging and fires, the private owners no longer kept up the taxes on such lands, and the several counties of the State now hold title to an area totaling more than 1,100,000 acres, most of it denuded. Until 1939 the counties did not have the authority to undertake the management of such tax-reverted lands and, in general, followed the practice of selling them for almost anything they could get.

That year the county courts received legal authority to manage, develop, or sell such tax-reverted lands as their best judgment dictated. It was also provided that they could turn them over to the State for the establishment of State forest units. Several thousand acres were turned over to the State in the past 2 years, with the result that the State Board of Forestry now administers more than 72,000 acres in eight counties.

New Legislation

Perhaps the most significant provision of the bills passed in 1941 was that wherein the State Board of Forestry was authorized to acquire forest lands by purchase, gift, donation, exchange, or acceptance of title from the counties. Where the county turns over tax-reverted lands to the State, 5 cents an acre a year is deducted for fire protection, and the balance of any sales values is divided 75 percent to the county and 25 percent to the State. Where the acquisition is made by other means, the division between the county and State is 50–50, after other costs are deducted. This act is tremendously significant when it is recognized that there are potentially 5,000,000 acres or more that can reasonably be expected to revert to the counties, following logging operations of the next decade or two.

Another significant provision is unique. This act provides for minimum standards in logging operations. It sets up a definite group of provisions looking to the restocking of all privately owned lands as they are logged. One requirement is that there be left after logging a sufficient number of seed-producing trees to insure natural restocking. The regulations vary according to the area and type of timber being logged. It is supervised by the State forester. The act has the machinery for making these provisions effective.

A third phase of the forestry legislation was that part providing for a research laboratory at the Oregon State College School of Forestry.

The primary objectives of this laboratory will be to determine methods of eliminating at least a part of the waste in logging and milling, through new products, remanufacture, or markets.

Finally, there was a group of bills either amending old legislation or providing new powers to the State Board of Forestry in the program of protection from fire. These amendments are aimed to strengthen the protective measures around the woods operations, to provide additional personnel, and to see that immediate and vigorous action is taken on every fire no matter where or how it starts.

This latter phase of the legislation has become particularly significant with the advent of fine roads throughout the forested areas and the great increase in tourist traffic, hunters, and fishermen.

A Public Awakening

Foresters claim no magic in the new forestry legislation that will immediately solve the land use problems of some 12 million acres. Forestry is a long-time project requiring generations to work out and there can be no doubt that additional laws and amendments to laws already passed will be asked of forthcoming sessions of the Oregon legislature. Judging from the attitude of the 1941 legislature and the growing public consciousness of this land use problem of Oregon, there can be no doubt that if the laws now in existence are intelligently administered, new laws and amendments will be adopted as needed and supported not only by the legislature, but by the people of Oregon.

Land use planning has already played an important part in the progress made to date. But even a greater contribution can reasonably be expected within the next few years through the cooperation of local committees and technical foresters in studying the problems and guiding their solution. Already much of the old animosity of farmers and stockmen toward public timber holdings has disappeared as a result of the cooperative study of forestry problems, through local land use committees.

In several of the western Oregon counties the county land use committees serve in an advisory capacity to the county boards that determine the legal classification of land under chapter 381, Oregon Laws.

In some counties in the pine belt, the committees are studying and including activities looking toward the development of selective cutting and sustained yield units through the cooperation of public and private owners. This is particularly true in Klamath county, where the members are making it their major project and are gathering the fundamental data, maps, and charts upon which to base an area policy aimed at stabilization of the timber industry in that county. Similar studies are being undertaken in other counties of the pine region.

In the Douglas fir region the land use problem in connection with deforested areas is usually placed in number one position on the list of the county problems. Some of these county committees have made extremely detailed and fundamental studies of the problem as it affects them as taxpayers, both now and from the long-time standpoint.

County Recommendations

Perhaps because the problem is so acute, the Clatsop County committee has made an extremely comprehen-

sive analysis of the problem and has developed a broad program for the utilization of deforested areas. It recommended that 335,000 acres of that county be dedicated to the reproduction of timber crops, but on the other hand, it pointed out that there are 118,000 deforested acres that will make the greatest contribution if developed for grazing purposes. It has played an important part in the establishment of a branch experiment station in the area to study ways and means for the development of such grazing land and the management of it after development. This area is known as the Northrup Creek Experiment Station of Clatsop County.

Illustrative of the thinking of the land use committee of Clatsop County is the opening statement made by the chairman at a recent hearing before the Clatsop County court, of which only a portion is quoted.

"The land use committee of Clatsop County has studied the problem of land in the county and its relation to agriculture and the community as a whole. We believe there is an interrelationship and interdependence among the various major industries that support the economic structure of the county. Because of this interrelationship we are interested in what is happening not only in the field of agriculture, but in the other major industries of the county."

The report goes on to suggest ways and means for administering tax reverted lands for the protection of forested areas from fires, for the development of grazing, and for the establishment of suitable manufacturing plants for the utilization of the timber growing or to be grown on the restocked lands.

Two of the great problems confronting all people interested in the forests of Oregon are: First, the development of a far-reaching fire prevention program; and, second, the establishment of sustained yield units that will enable industry and the workers to look to the future with some degree of assurance.

Priority

Agriculture, having been not only the first of arts, in priority of time, but the first in the estimation of the wisest and greatest men of every age, should ever be deemed the first object, both of public and private attention. Power—especially that delegated by the people—should extend its arm, and open its hand, for its aid and protection. Wealth should unlock its coffers, for its encouragement; and genius and science should lavish their almost magical stores, for its instruction. Commerce should yield to its support a share of those profits whereof it is the source; and manufactures should bestow a willing tribute to the art; on which their existence depends. Those who devote themselves to the learned professions, should render to it both homage and contribution.

—Richard Peters

Books

SINGING VALLEYS, THE STORY OF CORN. *Dorothy Giles.* Random House. New York. 361 pages.

by DEWITT C. WING

SINGING VALLEYS is a lineal and worthy descendant of a little classic unmentioned in Miss Giles' impressive bibliography. Farmers' sons who 40 years ago were working their way through Midwest agricultural colleges had but few textbooks. Some of these young men treasured as a supplemental text an illustrated volume of 106 pages entitled "Corn Plants: Their Uses and Ways of Life." It was written by a farm-reared botanist, F. L. Sargent, whom Harvard University had called from Wisconsin. His main purpose was "to enliven the study of plants by showing some of their intimate relations with our own daily lives." No book of the period better served that purpose. Miss Giles' is a nontechnical, broader, and saltier work uniquely adapted to the same purpose. Memorable for its range of facts, its vivid prose is inspired by and tells the story of corn as it has never been told before. For a title she drew upon a psalm—"the valleys also are covered over with corn; they shout for joy, they also sing."

Corn, as she tells its story, identifies itself with the historic and currently basic elements of human welfare in the Western Hemisphere. A welcome newcomer to a field hitherto barely touched by first-rate talents in twentieth century literature, she dedicates her book to "my mother and all others who, like her, preserve the tradition received from their forefathers who cleared the fields, broke the ground, and sowed with the first corn the seeds of American liberty."

CHARMED by the author's sustained witchery, this reviewer waives his objections to the poetic license which she takes with the results of far-flung researches in the history and folklore of corn.

Any study of the cereals leads us in imagination back to a time long ago when our forefathers gathered the grains of wild plants for their food. Corn is the giant of the grass family, which includes many members. "Through mutual help, wild grasses and savages have developed into cultivated cereals and civilized men," Sargent wrote. He apparently implied, as some other later authorities have, that human societies that make little or no provision for unproductive days, and little or no use of writing, may be called primitive or uncivilized. By definition, therefore, civilized people are "literate providers."

Corn means, loosely, "any sort of edible grain, in the language of Shakespeare, Milton, and the trans-

lators of the King James Bible. Corn conveys no exact meaning that a botanist can analyze."

PRIMITIVE SAXONS devised the word and took it with them from the shores of the Baltic to England. "Corn" probably stood for wild barley or for split wheat. This was the "corn" for which Israel sent his sons to Egypt. Split wheat and barley were the grains known to early Europeans.

"Corn" became the English name for the yellow kernels which the Spaniards had called for a century by the Haitian name *mahiz*. To men of Devon who sailed with Sir Richard Grenville to Virginia plantations and to Drake's seamen ready to mutiny because of moldy bread and maggoty beef, the green maize fields that spread around every Indian village in the New World meant salvation from scurvy and famine.

"Corn meant renewed bodily strength and renewed faith in the emprise that had brought them across the Atlantic. All this they expressed when they called maize *Korn,* the word which had represented bread and life to their Saxon forebears."

Planters of corn when the world was young are celebrated by Miss Giles. Long before the first white men came to the Americas maize was known to and grown by all Indian tribes between the St. Lawrence and Lake Titicaca. Each tribe had its own name for it. Though phonetically different, all these names carried one significance. Whether spoken by Inca, Aztec, Creek, Sioux, Crow, Mohawk, Iroquois, or Algonquin, the name for maize meant "Our Mother," "Our Life."

Columbus was the first European to mention the grain. On November 5, 1492, he wrote in his journal that "there was a great deal of tilled land sowed with a sort of grain they call mahiz, which was well tasted, baked or dried, and made into flour." English slave traders, like Sebastian Cabot, purchased cargoes of human flesh in the Congo for maize grown on plantations where the blacks were to labor.

JOHN LEO, who visited Africa in 1535, tells of a tribe living 200 miles inland, on the Niger, who had "a great store of round and white kind of pulse, the like whereof I never saw in Europe. This is called maize in the West Indies."

Barbary pirates, preying on treasure ships coming heavily laden from Mexico and Peru, seized the grain in their holds. Turks scattered maize across northern Africa. They carried it to Constantinople and up the Danube into present-day Roumania and Hungary. Balkan peasants grow maize today as their Turkish masters taught them to do.

Bishop de Landa wrote a book containing an amazingly detailed picture of the life of Indians of Yucatan. It was widely circulated in Europe. He credited maize, their chief food, with the fecundity of Indian women. He told how he had tried to stop the Indians' worship of the "Earth Mother" and her son, the "Young Green God," which was a deification of the maize plant.

Among the natives of Yucatan are preserved folklore and folkways that originated in far-off days. Maize grown by the natives of Yucatan was of four colors—white, red, yellow, and blue. When the native went out to sow, he carried the seed in a sack slung over his shoulder. With a sharp-pointed stick he

made a hole in the ground, dropped into it four or five grains and covered them over. "Some New England farmers," the author remarks, "still plant sweet corn in this way; the way Squanto taught the men of Plymouth; the way John Smith learned of Powhatan, and instructed the starving gentlemen of Virginia to follow for success with the crop. In the Southern States a rhyme for the ritual is: 'One for the squirrel, one for the crow; one for the cut-worm, and one to grow.' "

IT WAS DIFFICULT to persuade "the first Virginians," arriving at Jamestown, that they must become planters, not adventurers; and that their survival depended on their driving roots into the soil. "He that does not work shall not eat," said their leader John Smith. Work, he explained, meant tree-chopping, grubbing up roots, and breaking the soil with tools brought from England. In all, the first settlers in their first year cleared and planted in wheat and vegetables about 4 acres. Woods in the area were free of underbrush, thanks to the Indian practice of burning out the low growth to aid them in deer stalking, and the woods yielded venison, squirrel, opossum, raccoon, quail, and wild turkey. Fringes of the pine and cedar woods offered crab apples, several varieties of cherries, persimmons, raspberries, and wild strawberries.

John Smith repeatedly went corn trading in the tidewater country during his first 2 years at Jamestown. He spied out the land. It was no narrow isthmus such as the Spaniards had found in Yucatan. Everywhere he went he found corn; but Jamestown had to buy its corn, for which manufactured things were exchanged. In the spring of 1609, Smith set the first cornfield—40 acres—in Jamestown.

Two Indians instructed the settlers. The crop flourished. New colonists seized on 7 acres of the field and in 3 days had eaten every ear of it. Jamestown had bread to eat. It had squirrel stew and venison, roasted turkey, and compotes of raspberries, sweetened with sugar pressed from green maize stalks. For some of all this Pocahontas was responsible. Smith, writing to Queen Anne, said that "had not the savage fed us, we directly had starved."

NEW ENGLAND adds a distinctive flavor to the story of corn. Massachusetts Indians, with whom the Pilgrims traded, had no such supplies of corn as John Smith had found in the granaries of Virginia villages. Visitors from that State looked on New England corn planting with disfavor. One of them reported that "except a herring be put into the hole that you set the corne or maize in, it will not come up." New Englanders continued to set their corn a herring to the hill for many years and until the increase of domestic animals gave them manure. New England Indian tribes, because they fertilized the soil, were able to plant their maize year after year in the same hills without rotating their fields, which was the invariable practice of Indians living to the south. Clean cultivation of corn obtained among all Indians of America. Indians scorned the colonists for letting weeds grow between their hills of corn.

Hudson River settlers grew wheat for export and corn for their own use.

Persistently, indomitably, colonists pushed their frontier ever further and further west. Corn grew in the valleys.

With corn, venison, and partridge, and trout from amber-brown pools, men and women could live. They could raise families, build houses and churches. They could form townships and counties and ultimately a commonwealth. "Corn provided infant America with a backbone while it was developing the use of its legs."

OHIO had the needed 60,000 settlers by 1803 to make an independent State, but more than one-third of the territory was a waiting wilderness. In the Scioto Valley and along the Muskinghum River corn grew taller than anyone had ever seen it west of the Alleghenies.

"Where the fields yield only a frugal sufficiency, thrift becomes a prized virtue." By sustaining a large population on stingy soil, the French developed a genius for proportion and utility, which were also among the glories of an infertile, overcrowded, and frequently hungry Greece. Those who had seen the golden yields of Virginia and of Calvert's Maryland shook their heads and denied New England a future.

"New England raised a long, wailing cry over the Louisiana Purchase, forgetting its own brothers and cousins and sons in the Ohio country, forgetting that New England's ships carried Midwestern foodstuffs." All it thought of, apparently, were the 15 million dollars added to the national debt. "How did that madman in the White House think the debt was going to be paid?" So stormed the Philadelphia merchants who traded down the Delaware and the Baltimore wheat-flour dealers. So protested New York bankers and the Bostonians, who were more interested in whale oil than land. "By no stretch of eugenics could Emerson have come out of Virginia, nor Lee from Connecticut. Such plenteousness as sprang from Virginia's alluvial soil never rewarded the men and women of Massachusetts."

In the closing years of the seventeenth century, Camerarius, European botanist, experimenting with American corn, "startled the world with the announcement that plants, as well as animals, have a sex life * * *. The English tongue, which has voiced the greatest poetry, has no impassioned sonnet to place beside the courtship of corn."

Miss Giles' story of hybrid corn begins in the garden of an Augustinian monastery in Moravia, where Johann Mendel "advanced the science of genetics a full century," and ends with the hybrid seed-corn industry which grew out of scientific work done by G. H. Shull, former Secretary of Agriculture Henry A. Wallace and others. "If you plant one acre of good cornland, with any luck in the world you may expect to gather a harvest of 60 bushels * * * worth approximately $36 * * *. It is worth 43 pounds of cornmeal, 5 gallons of liquor, 10 pounds of pork, 30 pounds of starch, 40 pounds of corn sirup, 1½ pounds of corn oil or 25 pounds of dextrose * * *. The Missouri corncob-pipe industry amounts annually to some $500,000."

"Singing Valleys" has earned for its author the thanks of both realistic and romantic Americans for enriching the literature of a major agricultural commodity, of which

700 million bushels are stored in the Ever-Normal Granary against days of need in a world largely gone berserk over food and raw materials. Corn itself and the domestic animals and fowls that it feeds may be decisive in the outcome of the present war and in the peace that will terminate the military phases of the stupendous incident.

Sargent, the botanist to whom reference has been made, writing in 1899, said: "If it should some day come to pass that the various countries of North and South and Central America shall join in one grand confederation, then surely no fitter emblem could be chosen to symbolize such a union of the nations of America than Indian corn, whose golden grain has proved to be the richest treasure of the West."

BEEKEEPING AS A HOBBY. Kyle Onstott. Harper & Brothers. New York. 137 pages.

by JAMES I. HAMBLETON

"BEEKEEPING AS a Hobby," by Kyle Onstott, is, apiculturally speaking, well written. It is full of good material not only for the hobbyist but for the person who keeps bees as a means toward a livelihood.

The author has done exceptionally well in covering the broad subject of beekeeping and its many ramifications within 150 pages. His recommendations comprise what might be considered the average of the practices of a group of successful beekeepers and, for the most part, are sane and conservative.

There are points here and there that could be criticized. For instance, the author says (p. 2, last paragraph) that the average yield of honey per hive is greater in the South, the Tropics, and the rural parts of California than in most other communities including the colder climes. As a matter of fact, however, the largest yields are invariably obtained in the more northern locations.

At times the author is perhaps too optimistic in implying that colonies of honeybees will do pretty well taking care of themselves. Invariably one is surprised how quickly bees respond to proper treatment. The reverse is equally true, however. Neglect soon reduces an otherwise thriving colony to an empty shell.

It seems to the reviewer that the question of producing chunk honey was too summarily dismissed—that chunk honey can have a definite place in the operations of an amateur beekeeper. Also that the author would have done well to recommend that the hobbyist produce cut-comb honey. The production of cut-comb honey is ideal for the small apiary. Bees respond well to the production of cut-comb honey, minimum equipment is necessary, and the knowledge and experience gained in producing honey in this form enables one to produce extracted honey or to change over to the more complicated manipulations involved in comb-honey production.

The beekeeping advice throughout the book, however, is good and it is easy to see that the author has read

both sides of most questions and has shown good judgment in giving the best.

To the satisfaction of the reader, the author skilfully avoids what might otherwise be pitfalls. As an example, in mentioning the theory that bees prefer light- to dark-colored clothing on persons working with bees (p. 49, par. 4) instead of taking sides or trying to give his own opinion of whatever the truth may be, he says whichever is true "hives should be opened only on fair days after the chill of the morning and before the chill of the evening."

HUNGER SIGNS IN CROPS. *Gove Hambidge, Editor. 327 pages. The American Society of Agronomy and the National Fertilizer Association. 1941.*

by W. H. ROSS

THE DEVELOPMENT OF normal healthy plants under favorable weather conditions is dependent on good soil management, control of insects and diseases and use of well-balanced fertilizers when necessary. Carriers of nitrogen, phosphorous, and potassium are the most commonly used fertilizers and long experience has shown that a deficiency of one or more of these elements in the soil impairs not only the yield but also the grade and keeping quality of crops. The principal fertilizer materials used in the early history of the industry were natural products that contained not only the primary elements mentioned but also ample proportions of other plant nutrients. Plant food deficiencies were therefore rarely noted in crops grown on soils receiving adequate applications of fertilizers of this kind or of barnyard manure.

With the development of the synthetic process for fixing the nitrogen of the air, it became possible to prepare fertilizer mixtures that contained a suitable proportion of all the primary plant food elements but little or none of the secondary or minor elements. The continued use of fertilizer mixtures of this kind on soils inadequately supplied with certain of these plant nutrients soon resulted in the appearance of new plant diseases that were merely hunger sign symptoms of plant-food deficiencies. As the cropping of soils increases, as it necessarily must to supply the food requirements of an increased population, the areas over which deficiency symptoms become manifest are also likely to increase. It is therefore particularly opportune and timely that a book should appear at this time, which will help us to recognize nutritional deficiency in plants and thus provide the information whereby plant food deficiencies may be corrected. This book entitled "Hunger Signs in Crops" was prepared by a group of fourteen scientists under the editorship of Gove Hambidge. The subjects of the nine chapters of the book with the authors are as follows:

Why do Plants Starve? George D. Scarseth and Robert M. Salter.

Plant-Nutrient Deficiency in Tobacco. J. E. McMurtrey, Jr.

Deficiency Symptoms of Corn and Small Grains. George N. Hoffer.

Plant-Nutrient Deficiency Symptoms in the Potato. H. A. Jones and B. E. Brown.

Plant-Nutrient Deficiency Symptoms in Cotton. H. P. Cooper.

Plant-Nutrient Deficiencies in Vegetable or Truck-Crop Plants J. J. Skinner.

Nutrient-Deficiency Symptoms in Deciduous Fruits. O. W. Davidson.

Plant-Nutrient Deficiency Symptoms in Legumes. E. E. DeTurk.

Symptoms of Citrus Malnutrition. A. F. Camp, H. D. Chapman, George M. Bahrt, and E. R. Parker.

These nine chapters deal with all the major and many of the minor crops. The plant food elements for which deficiency symptoms are described are nitrogen, phosphorous, potassium, calcium, magnesium, sulfur, iron, manganese, boron, copper, and zinc. In a few cases, injuries caused by excesses of certain elements are mentioned in the text or illustrated in figures, but no attempt has been made to cover this subject systematically. This book gives in one publication the most authoritative and up-to-date information available on the malnutrition symptoms in plants. Care has been taken to keep the book as nontechnical as possible and it should therefore be useful to farmers as well as to students and technical workers in general.

The book is printed in large type on a good grade of paper and contains 79 color plates in addition to 95 half-tone illustrations. The excellent quality of these color plates and illustrations, the attractive appearance of the book in general and above all the authoritative and timely data which it contains make this book a credit to the committee on fertilizers of the American Society of Agronomy who supervised the assignment of the chapters to competent authors, and to the National Fertilizer Association which assumed the responsibility of finding a way to publish the book and make it available at a very low price.

INDIAN AGENTS OF THE OLD FRONTIER. *Flora Warren Seymour.* D. Appleton-Century Company. New York. 402 pages.

by CAROLINE B. SHERMAN

ALL KINDS are found among the Indian agents of the past. Around Lincoln's time the impression became prevalent—and it persisted—that little could be expected of them and that the few who really tried to do a good job were hindered by lack of cooperation, local or governmental.

A few of these figures are featured in this book. As the author remarks in her foreword, she has not elected to write about those who speedily found their way back home or to the penitentiary; the nature of their defections can be conjectured only by reading between these lines.

EARLIEST among the agents whose names will linger were the treaty makers—the treaties constantly involving land.

The Civil War tore at the still-insecure loyalties of the Indian tribes, casting them into precarious situations. The Confederacy found ready at hand an unusual man to act for them among the tribes—Albert Pike, a Massachusetts boy grown to be a publicist, lawyer, Indian expert,

and several other things in the State of Arkansas. Kit Carson was the romantic figure among the Indian agents on the Federal side; under him the Navajo tribe made a final treaty with the United States that remains their Magna Charta.

AMONG the later names to remember, for different reasons, are Edward P. Smith, who did his best and was worsted; Laurie Tatum, whose immovable Quaker peace principles smashed on the rock of tribal force so that Henry Alvord's military judgment and diplomacy had to be substituted; other Quakers like Darlington and Miles; Tom Jeffords, who alone knew how to keep Apache tribes of his day in line with their word; James H. Wilbur, beloved "Father" to the Yakimas; John Clum, boy agent and optimist who fancied himself as an Apache civilizer; William Arny, who after 40 years of devotion to the "downtrodden races" was called summarily a good man, but disputatious; the articulate Alfred Meacham; McLaughlin, the trouble shooter; and Hugh Lenox Scott, who comprehended Indian character. Other workers whose names are likely to enter any history of the race, though for different reasons, are Elaine Goodale Eastman, Alice Fletcher, Helen Hunt Jackson.

Shorter Notices

LET US NOW PRAISE FAMOUS MEN. *James Agee and Walker Evans. Houghton Mifflin Co., Boston.* 471 *pages.*

Hardy is the reviewer who will attempt to give readers a clear idea of this book or who will offer a hard-and-fast appraisal of it. The authors call it an effort in human actuality made after they had lived for several weeks in the homes of three sharecropper families in Alabama and thought long about their experiences and impressions. The publishers say that it is violent and beautiful.

In this effort by the authors they have devised or pressed into use many novel techniques. There are four-page sentences, paragraphed but with no capitals. There are single word sentences. Repetitions. Long lists of mere words. Obscene words and phrases. Reproductions of torn and incomplete parts of newspaper clippings. Striking photographs which are announced to be equal to the text in importance. Worded "colons" between parts of the book. Smells that penetrate through the eye. Philosophical and less germane digressions. Parallels drawn from music and the other arts.

To this reader the result is an amalgam of compassion and satire, of effectiveness and obscurity. But it may well point the way to a truer realization of the incredible lives of this segment of our population. It may be, to other reports, about what The Living Newspaper was to the usual stage production, in vivifying for the thousands the long struggle regarding housing conditions in large cities. Each reader will have to decide for himself whether these methods are, to him, effective. But one conclusion seems certain. If rural destitution and its results on human lives wrought on many men as on these two, there would soon be less of it, even though the authors do seem to feel that the causes and pressures have reached hopeless magnitudes—C. B. S.

U. S. GOVERNMENT PRINTING OFFICE: 1941

To ELEVATE *the social condition of the agriculturist, to increase his prosperity, and to extend his means of usefulness to his country by multiplying his sources of information should be the study of every statesman and a primary object with every legislator.*

—ZACHARY TAYLOR